



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS-R2-ES-2020-0015; FF09E21000 FXES1111090FEDR 234]

RIN 1018–BD20

### Endangered and Threatened Wildlife and Plants; Endangered Species Status for South Llano Springs Moss

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), determine endangered species status under the Endangered Species Act of 1973 (Act), as amended, for the South Llano springs moss (*Donrichardsia macroneuron*), an aquatic moss species from Edwards County, Texas. We are excluding the single unit of proposed critical habitat, and, therefore, no critical habitat is being designated for the South Llano springs moss. This rule adds the species to the List of Endangered and Threatened Plants and applies the protections of the Act to the species.

**DATES:** This rule is effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** This final rule is available on the internet at <https://www.regulations.gov>. Comments and materials we received, as well as supporting documentation we used in preparing this rule, are available for public inspection at <https://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0015.

**FOR FURTHER INFORMATION CONTACT:** Karen Myers, Field Supervisor, U.S. Fish and Wildlife Service, Austin Ecological Services Field Office, 1505 Ferguson Lane, Austin, Texas; telephone 512-937-7371. Individuals in the United States who are deaf,

deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

## **SUPPLEMENTARY INFORMATION:**

### **Executive Summary**

*Why we need to publish a rule.* Under the Act, a species warrants listing if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become endangered within the foreseeable future throughout all or a significant portion of its range). If we determine that a species warrants listing, we must list the species promptly and designate the species' critical habitat to the maximum extent prudent and determinable. We have determined that the South Llano springs moss meets the definition of an endangered species; therefore, we are listing it as such. Both listing a species as an endangered or threatened species and designating critical habitat can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process.

*What this document does.* This rule lists the South Llano springs moss (*Donrichardsia macroneuron*) as an endangered species under the Act. We are excluding the single proposed critical habitat unit for the species.

*The basis for our action.* Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that increased groundwater pumping from the Edwards-Trinity aquifer that supplies water for

the springs that the South Llano springs moss is dependent on, as well as flash floods, sedimentation, invasive plant species, a single population, small population size, and lack of genetic diversity, and cumulative impacts from these threats, pose threats to this plant species to the degree that listing it as an endangered species under the Act is warranted.

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the maximum extent prudent and determinable. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat.

### **Previous Federal Actions**

Please refer to the proposed listing and critical habitat rule (86 FR 53609; September 28, 2021) for a detailed description of previous Federal actions concerning this species.

### **Summary of Changes from the Proposed Rule**

We reviewed the comments related to our proposed listing determination and critical habitat for the South Llano springs moss (see **Summary of Comments and Recommendations**, below) and completed our analysis of areas considered for exclusion under section 4(b)(2) of the Act. This final rule incorporates changes from our proposed

listing and critical habitat rule (86 FR 53609; September 28, 2021) based on the exclusion analysis described in *Exclusions Based on Other Relevant Impacts*, below.

Specifically, we have determined that the benefits of excluding critical habitat outweigh the benefits of inclusion. For a complete description of our exclusion analysis, see **Consideration of Impacts under Section 4(b)(2) of the Act**, below. Based on our analysis, we are excluding the Upper South Llano River Unit (0.48 acre (ac) (0.19 hectares (ha))) of proposed critical habitat. As this was the only unit proposed for designation as critical habitat, no critical habitat is designated for this species in this rule.

Because we are not designating critical habitat for this species, we present an abbreviated list of determinations under **Required Determinations** in this rule (see below). In that portion of this rule, we present only those determinations that apply to listing actions due to the Act's requirement that listing decisions be made "solely on the basis of the best scientific and commercial data available" (16 U.S.C. 1533(b)(1)(A)), instead of the longer list of determinations that apply to critical habitat designations.

### **Supporting Documents**

A species status assessment (SSA) team prepared an SSA report for the South Llano springs moss. The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought the expert opinions of four appropriate specialists regarding the SSA. We received one response. We also sent the SSA report to partners, including scientists with expertise regarding this species, for review. We received review from one partner (Texas Parks and

Wildlife Department).

## **I. Final Listing Determination**

### **Background**

The South Llano springs moss is an aquatic moss that grows on submerged or partially submerged rocks. The deep, loosely interwoven mats are blue-green to blackish-brown when shaded and yellow-green when exposed to full sun. Like all mosses, the South Llano springs moss forms clonal colonies of leaf-bearing stems.

The South Llano springs moss has an extremely limited range: it has only been documented in two locations and is thought to be extirpated from one of those. The remaining extant site is from Seven Hundred Springs, on the South Llano River in Edwards County, Texas. The extirpated site, referred to as the Redfearn site, was about 5 kilometers (km) (3.1 miles (mi)) downstream from Seven Hundred Springs in Kimble County, Texas, although the exact location is unknown. Both sites occur within the Edwards Plateau. Researchers visited 10 other springs in the Llano and South Llano River watersheds in 1978 and 1979 but found no additional populations (Wyatt and Stoneburner 1980, pp. 514, 516).

The South Llano springs moss was discovered at Seven Hundred Springs in 1932 and was most recently confirmed there in 1979 (Wyatt and Stoneburner 1980, entire). When last observed in 1979, the South Llano springs moss was abundantly dispersed in the spring outflow, partially submerged in shaded areas within an area of about 10 by 100 meters (m) (33 by 328 feet (ft)) between the springs and the river below on privately owned land (Wyatt and Stoneburner 1980, p. 516). Observation of the habitat from the opposite side of the river in 2017 indicated that the habitat appears to be in excellent condition (Service 2017, entire). This is the best available information we have for this site; consequently, we consider the Seven Hundred Springs population to be extant. The South Llano springs moss was last documented at the Redfearn site in 1971. The two

specimen labels from these collections state that they were collected “1 mile south of Telegraph” with one specimen collected on a dam and the other from limestone at the edge of the creek. On topographic maps, Telegraph is a location consisting of a single store that is not directly along the river; however, there is a road connecting Telegraph to the South Llano River with a bridge, and this may be the location from which Redfearn was measuring. Due to the vague location description, there is uncertainty around the exact location of the Redfearn site. In 2017, we conducted surveys along 5.7 km of the South Llano River, including the 2.25 km in which we believe Redfearn collected his specimens. All aquatic moss species encountered were collected and a sample of each of the four species encountered was sent to a bryologist at the Missouri Botanical Garden for identification. None of the species collected were found to be the South Llano springs moss. This is the best available information we have for this site; consequently, we consider the Redfearn population to be extirpated. It is possible that the species does not occur anywhere else. However, few surveys for this species have been conducted. Consequently, it is possible that this species occurs elsewhere along Paint Creek or the South Llano River. The best available data indicate that only the Seven Hundred Springs population persists.

A thorough review of the taxonomy, life history, and ecology of the South Llano springs moss is presented in the SSA report (version 1.1; Service 2023, entire).

## **Regulatory and Analytical Framework**

### *Regulatory Framework*

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species. In 2019, jointly with the National Marine Fisheries Service, the Service issued a

final rule that revised the regulations in 50 CFR part 424 regarding how we add, remove, and reclassify endangered and threatened species and the criteria for designating listed species' critical habitat (84 FR 45020; August 27, 2019). On the same day, the Service also issued final regulations that, for species listed as threatened species after September 26, 2019, eliminated the Service's general protective regulations automatically applying to threatened species the prohibitions that section 9 of the Act applies to endangered species (84 FR 44753; August 27, 2019).

The Act defines an "endangered species" as a species that is in danger of extinction throughout all or a significant portion of its range, and a "threatened species" as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term “threat” to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term “threat” includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term “threat” may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an “endangered species” or a “threatened species.” In determining whether a species meets either definition, we must evaluate all identified threats by considering the expected response by the species and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an “endangered species” or a “threatened species” only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term “foreseeable future,” which appears in the statutory definition of “threatened species.” Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term “foreseeable future” extends only so far into the future as the Services can reasonably determine that both the future threats and the species’ responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. “Reliable” does not mean “certain”; it means sufficient to



provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define the foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

#### *Analytical Framework*

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be listed as an endangered or threatened species under the Act. However, it does provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket FWS-R2-ES-2020-0015 on <https://www.regulations.gov>.

To assess South Llano springs moss' viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example,

climate changes). In general, the more resilient and redundant a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

### **Summary of Biological Status and Threats**

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability.

Based on the conditions of the only known current and historical populations, the South Llano springs moss requires a constant flow of mineral-rich spring water or spring-fed river water over shallow limestone rocks. Seven Hundred Springs and the areas thought to contain the Redfearn sites are supported by spring flows within the Edwards-Trinity aquifer and the South Llano River watershed (Seven Hundred Springs and Big Paint Springs). These springs have never ceased flowing in recorded history. Water from these springs emerges at a very consistent temperature and is rich in travertine minerals.

Rocks and plants immersed in the upper South Llano River quickly become encrusted with travertine- or tufa-like mineral deposits, to an unusual degree not seen in most springs in the Edwards-Trinity aquifer (Service 2017, p. 2). Thus, it is possible that high mineral concentrations, or the precipitation of minerals from solution, could be requirements for the establishment and growth of South Llano springs moss individuals.

The water temperature of Seven Hundred Springs was consistently 21.5 degrees Celsius (°C) (70.7 degrees Fahrenheit (°F)) in June, and the pH ranged from 7.0 to 7.2 (Wyatt and Stoneburner 1980, p. 516). The species occurred in both shaded and exposed niches at Seven Hundred Springs (Wyatt and Stoneburner 1980, p. 516). Associated vascular plant species included maidenhair fern (*Adiantum capillus-veneris*), southern shield fern (*Thelypteris kunthii*), watercress (*Nasturtium officinale*), and members of the mint family (Lamiaceae) and composite family (Asteraceae) (Wyatt and Stoneburner 1980, p. 516). Associated moss species included *Hygroamblystegium tenax* and *Eucladium verticillatum* (Wyatt and Stoneburner 1980, p. 517).

Mosses closely related to the South Llano springs moss reproduce both sexually and asexually. However, there is no evidence that sexual reproduction is occurring in the single remaining known site of occurrence, as no plants with female reproductive structures were observed in the wild population or during a 16-month propagation study in 1978 and 1979 (Wyatt and Stoneburner 1980, p. 517). The plants cultivated in captivity produced only male reproductive structures. It is possible that the known population may be a clone of a single or a few male individuals and that sexual reproduction is no longer possible for the species. Therefore, the South Llano springs moss has extremely low representation with one or just a few genetically identical individuals.

In addition to the habitat requirements described above, sufficiently resilient populations of South Llano springs moss need to be large enough that local stochastic

events do not eliminate all individuals, allowing the overall population to recover from any one event. The larger a population is, the greater the chances that a portion of the population will survive. The minimum viable population size is not known for this species. However, the geographic extent is provided from the observations of Wyatt and Stoneburner (1980, p. 516). When last observed, the South Llano springs moss grew in the spring outflow partially submerged in shaded areas within a 10-m (33-ft) zone between the springs and the river below (Wyatt and Stoneburner 1980, p. 516). We assume that the population could be as large as the spring flow and substrate allow in this zone. The area occupied by a moss population is a practical surrogate for abundance, provided that it is understood that this does not address the number of genetically unique individuals. Since the South Llano springs moss occupies only a small area at one location, this species has no redundancy and would be unable to recolonize following a catastrophic event.

Recruitment is also needed for populations to be adequately resilient. The colony at Seven Hundred Springs may be a clone of a single individual, or only male individuals, and is presumed incapable of sexual reproduction (Wyatt and Stoneburner 1980, p. 520). Unless female individuals are present, the colony of South Llano springs moss at Seven Hundred Springs can persist and grow only through vegetative budding or through the establishment of fragments that happen to lodge in suitable niches. These mats can expand to occupy new habitats while the portion that established earlier dies. An individual remains alive as long as old stems die no faster than new stems develop. The same individual could migrate back and forth through available habitats for an unlimited period of time, and it is not inconceivable that the individuals we see today arose from spores that germinated many thousands of years ago. For the species to persist, the recruitment of new individuals must equal or exceed mortality.

The species' range may have been more extensive 10,000 years ago, and subsequently became restricted to this single location as the climate warmed and other springs periodically stopped flowing (Wyatt and Stoneburner 1980, pp. 519–520). To assess the climate changes that could affect this species into the future, we examined the climate parameters using both the representative concentration pathway (RCP) 4.5 and RCP8.5 scenarios to provide a range of projected values. These models predict that by 2074, climate changes could result in a reduction of aquifer recharge and an increased duration and severity of droughts and heavy rainfall, thereby increasing the threats of interrupted spring flows and flash floods. Annual precipitation is highly variable in central Texas, and severe, multi-year droughts occurred during the 1950s and from 2006 through 2012. During these historical periods of drought, only the largest springs along the South Llano River, including Seven Hundred Springs, continued flowing, but at lower rates. Prolonged drought in combination with increased pumping from the Edwards-Trinity aquifer could increase the probability of interrupted flows of these springs and, consequently, the extirpation or extinction of the South Llano springs moss. Despite the frequency of prolonged drought, the region is also subject to extremely heavy rainfall, often resulting from tropical storms in the Gulf of Mexico as well as the Pacific Ocean. All of these factors contribute to flash floods (high intensity, low duration floods) that can drastically change stream beds and the surrounding vegetation, potentially scouring the South Llano springs moss from its rock substrate along the edge of the stream, or burying it beneath deposits of silt, sand, and gravel.

The amount of pumping from the Edwards-Trinity aquifer is one of the most important factors influencing storage in the aquifer and spring flows. Aquifer water levels are stable or have declined slightly over most of the Edwards-Trinity aquifer, but in some areas, heavy pumping has led to long-term declines in aquifer levels and diminished or interrupted spring flows (George et al. 2011, p. 35; Region F Water Planning Group

2015, pp. 1-34, 3-15; Plateau Region Water Planning Group 2016, pp. 7–11). These sources project relatively little growth in the human population in Edwards and Kimble Counties during the next 50 years. Conversely, population growth is projected to increase for five central Texas counties, which include the metropolitan areas of San Antonio, New Braunfels, San Marcos, Austin, Round Rock, and Georgetown, by 32 percent between 2017 and 2037, and by 53 percent between 2017 and 2050 (Texas Demographic Center 2017, p. 1). It is reasonably foreseeable that increased pumping may occur from the Edwards-Trinity aquifer for transfer to other regions to supply increased municipal water demands. This increased pumping could reduce water storage in the Edwards-Trinity aquifer and spring flows in the South Llano River. Loss of spring flows, even for a short time, would likely reduce or extirpate the only known remaining population of the South Llano springs moss because the species requires constant immersion in flowing spring water to persist.

The Upper Llano River Watershed Protection Plan (Broad et al. 2016, pp. 51, 64–66, 86) identifies increased runoff, evapotranspiration, and sediment loading as impacts to the upper Llano River watersheds due to the encroachment of woody species. Recharge into the Edwards-Trinity aquifer in Edwards County has been reduced during prior periods of vegetation loss from overgrazing, resulting in increased runoff and the drying of some smaller springs (Brune 1981, p. 173). Aquifer recharge may also have been reduced by the encroachment of brush into formerly grass-dominated uplands (South Llano Watershed Alliance 2012, p. 9; Broad et al. 2016, pp. 40–41, 51). Aquifer recharge would also be reduced by an increase in evapotranspiration, due to increased temperatures.

Small populations are less able to recover from losses caused by random fluctuations in recruitment (demographic stochasticity) or variations in spring outflow (environmental stochasticity) (Service 2015, p. 12). In addition to population size, it is

likely that population density also influences population viability, as sexual reproduction, if it occurs at all in the species' current situation, requires male and female mosses to be in close proximity. Small, reproductively isolated populations are also susceptible to the loss of genetic diversity, to genetic drift, and to inbreeding (Barrett and Kohn 1991, pp. 3–30). The loss of genetic diversity may reduce the ability of a species or population to resist pathogens and parasites, to adapt to changing environmental conditions, or to colonize new habitats. The combined demographic and genetic consequences of small population sizes may reduce population recruitment, leading to even smaller populations and greater isolation, and further decreasing the viability of the species. These factors may already have contributed to the decline of the South Llano springs moss to its current state of extreme endemism in the upper South Llano River. All of the above stressors are exacerbated by the fact that the South Llano springs moss likely consists of only one small population. This species has an extremely low level of representation, no redundancy, and limited resiliency making it vulnerable to catastrophic events such as flash floods and droughts.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We have considered the cumulative effects from climate change, aquifer recharge, population growth, and groundwater pumping on the spring flows on which the South Llano springs moss is dependent. We have also considered the risk of prolonged drought and increased flash floods due to climate change. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. To assess the current and future condition of the species, we undertake an iterative analysis that encompasses and incorporates the threats individually and then accumulates and evaluates the effects of all the factors that may be influencing the species, including

threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative effects analysis.

#### *Conservation Efforts and Regulatory Mechanisms*

We are not aware of any projects specifically dedicated to the conservation of the South Llano springs moss. However, all efforts to improve rangeland and vegetation management within the Edwards-Trinity Aquifer recharge zone, and within the upper South Llano River watershed, and all efforts to manage and conserve the Edwards-Trinity Aquifer itself, contribute to the uninterrupted flow of spring water and protection of this species' habitat. The Partners for Fish and Wildlife program has assisted several local landowners with conducting upland habitat restoration and management. The landowner of the Seven Hundred Springs property has worked with the Partners for Fish and Wildlife Program to conduct prescribed burning and restore 1,600 acres of upland native grassland habitat for migratory monarch butterflies.

#### *Regulatory Mechanisms*

The continued existence of the South Llano springs moss requires the uninterrupted flow of groundwater from the Edwards-Trinity Aquifer at Seven Hundred Springs. In Texas, the use of groundwater is managed through the overlapping authorities of Regional Water Planning groups and Groundwater Management Areas established by the Texas Water Development Board and by Groundwater Conservation Districts established by either the Texas Legislature or the Texas Commission on Environmental Quality. The hydrologic basin that supplies the springs of the South Llano River lies within Regional Water Planning regions F (32 counties, including Kimble) and J Plateau (6 counties, including Edwards). The Hydrologic Unit Code (HUC)-12 watersheds (sub-watersheds) of the upper South Llano River occur in four Groundwater Conservation



Districts: Real-Edwards Conservation and Reclamation District, Kimble County Groundwater Conservation District, Sutton County Underground Water Conservation District, and Headwaters Underground Water Conservation District. These districts lie within Groundwater Management Area 7, which has established a desired future condition limiting average drawdown of the Edwards-Trinity aquifer to 2.1 m (7 ft). Therefore, if this limit on aquifer drawdown is not exceeded, we do not expect any interruptions to the flow of water at Seven Hundred Springs.

### **Summary of Comments and Recommendations**

In the proposed rule published on September 28, 2021 (86 FR 53609), we requested that all interested parties submit written comments on the proposal by November 29, 2021. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. A newspaper notice inviting general public comment was published in the Junction Eagle. We did not receive any requests for a public hearing. All substantive information received during comment periods has either been incorporated directly into this final determination or is addressed below.

#### *Peer Reviewer Comments*

As discussed in **Supporting Documents**, above, we received comments from one peer reviewer. We reviewed the comments we received from the peer reviewer for substantive issues and new information regarding the information contained in the SSA report (version 1.1; Service 2023, entire). The peer reviewer generally concurred with our methods and conclusions and did not provide any additional information or substantive comments.

#### *Comments from States*

*(1) Comment:* We received a comment from the State of Texas stating that the Service lacks sufficient data on status, trends, and threats to warrant listing the South Llano springs moss as an endangered species or to designate critical habitat.

*Our Response:* We are required to make listing determinations based on the best scientific and commercial data available at the time of our rulemaking. In our September 28, 2021, proposed rule (86 FR 53609) and in this final rule, we considered the best scientific and commercial data available regarding the South Llano springs moss to evaluate the species' potential status under the Act. Even though the species was last confirmed to be present in 1979, the best available information indicates the species is extant because the habitat remains intact and there has been no interruption to spring flow since that time. In our SSA, we document ongoing threats to the only known location of the species. We solicited peer review of our evaluation of the available data, and the peer reviewer who responded supports our analysis. In making a listing decision, we are not required to document a decline in species abundance, but rather document threats to the species and the risks these threats pose to the survival of the species. To date, we have been unable to access this location to conduct surveys, but we would welcome the opportunity to do so. Science is a cumulative process, and the body of knowledge is ever-growing. In light of this, we will always take new research into consideration.

Based on the best scientific and commercial data available, in this rule, we list the South Llano springs moss as an endangered species under the Act. We are excluding the single proposed critical habitat unit for the species (for more information, see our exclusion analysis under *Exclusions Based on Other Relevant Impacts*, below).

#### *Public Comments*

*(2) Comment:* One commenter stated that the listing of the South Llano springs moss would affect the ability of the landowner to use their private property and would require the landowner to bear costs associated with the protection of the species.

*Our Response:* When a plant species is listed, owners of private property where the species occurs are not obligated to incur any costs related to the species' conservation or alter current land management. The presence of a listed species on privately owned property does not affect land ownership, establish any restrictions on use of or access to the designated areas, or establish specific land management standards or prescriptions. Additionally, the presence of a listed species does not allow the government or public to access private lands.

The Act's section 9 prohibitions apply to the import and export, removal and reduction to possession, interstate or foreign commerce, and sale or offer for sale in interstate or foreign commerce of endangered plants. The prohibition on removal and reduction to possession of endangered plants applies to removing and reducing to possession, and maliciously damaging or destroying, the species on areas under Federal jurisdiction, not on private lands. That prohibition also applies to removing, cutting, digging up, or damaging or destroying the species on any other area in knowing violation of any State (in this case, Texas) law or regulation or in the course of any violation of a State criminal trespass law.

Section 7 of the Act does require Federal agencies to review the projects they fund, regulate, or carry out, such as federally funded highways and federally regulated pipelines and powerlines, to assess their effects on listed plants that occur on private lands. Through consultation with the Service, such projects may be modified to avoid or reduce effects to listed plants. Programs are available to aid interested landowners in the voluntary conservation of listed species. These programs may provide technical or financial assistance and may be requested from a local Service field office.

*(3) Comment:* One commenter stated that the Service lacks the authority to regulate intrastate species.

*Our Response:* We have the legal authority to regulate intrastate species.

Numerous Federal appellate courts have held that regulation of purely intrastate species is an essential part of the Act's regulatory scheme. See *San Luis & Delta-Mendota Water Authority v. Salazar*, 638 F.3d 1163 (9th Cir. 2011); *Alabama-Tombigbee Rivers Coalition v. Kempthorne*, 477 F.3d 1250 (11th Cir. 2007); *GDF Realty Investments, LTD. v. Norton*, 326 F.3d 622 (5th Cir. 2003); *Gibbs v. Babbitt*, 214 F.3d 483 (4th Cir 2000); and *Nat'l Ass'n of Home Builders v. Babbitt*, 130 F.3d 1041 (D.C.Cir. 1997). In particular, the Fifth Circuit Court of Appeals (the Fifth Circuit includes Texas) has held that regulation of purely intrastate species "is an essential part of" the Act's larger regulatory scheme (*GDF Realty*, 326 F.3d at 640).

(4) *Comment:* One commenter stated that the proposed rule would designate much of the Edwards Aquifer as critical habitat.

*Our Response:* We proposed a critical habitat designation only in the immediate vicinity of Seven Hundred Springs, an area of 0.48 ac (0.19 ha). We have determined that the benefits of excluding this single unit of critical habitat outweigh the benefits of including it, so we are excluding this single 0.48-ac area from critical habitat designation (for more information, see our exclusion analysis under *Exclusions Based on Other Relevant Impacts*, below). As a result, no critical habitat is being designated for the South Llano springs moss in this rule.

(5) *Comment:* Two commenters expressed concerns that the listing of the South Llano springs moss would stop or reduce groundwater pumping from the Edwards aquifer.

*Our Response:* Nothing in this rule requires a reduction or stoppage of groundwater pumping from the Edwards aquifer. See our response to (2) *Comment*, above. As we state there, section 7 of the Act requires Federal agencies to review the projects they fund, regulate, or carry out, such as federally funded highways and federally

regulated pipelines and powerlines, to assess their effects on listed plants. Although increased pumping from the Edwards-Trinity aquifer could potentially pose a threat to the species' survival, especially if combined with prolonged drought, pumping from this aquifer is not regulated by the Federal Government and is unlikely to have a Federal nexus.

*(6) Comment:* One commenter stated that the economic and societal costs from listing the South Llano springs moss outweigh the extinction of this species.

*Our Response:* Although we may consider economic impacts from a critical habitat designation, the decision on whether or not to list a species under the Act must rely solely on the best available scientific and commercial data (see 16 U.S.C. 1533(b)(1)(A)), without consideration of economic or societal costs.

*(7) Comment:* One comment stated that the proposed rule did not provide adequate alternatives through a National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) analysis.

*Our Response:* It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to NEPA in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

*(8) Comment:* One commenter stated that the Service should specify conservation measures for the species.

*Our Response:* The Act does not require this rule to specify conservation measures for the species. When we list a species as endangered or threatened under the Act, we first propose it as such, then we evaluate new information received through the

public comment process, then we make a final determination through a final rule. For the South Llano springs moss, we have determined the species is in danger of extinction. During the rulemaking process, we developed a recovery outline that will be used as the foundation of a recovery plan following listing. The recovery outline will be posted to our Environmental Conservation Online System (ECOS) website (<https://ecos.fws.gov/ecp/>) within 30 days after this final listing rule is published. The recovery outline presents a preliminary conservation strategy that will guide recovery actions until the full recovery plan is available. We then prepare a draft recovery plan, with the goal of completing it within 18 months of the publication of the final listing rule. We will post the draft recovery plan to ECOS when it is ready and provide a 60-day public review and comment period. The draft recovery plan will contain site-specific management actions needed for recovery, objective and measurable recovery criteria, and estimates of time and cost needed for recovery. Based on public and peer review comments, we will then prepare a final recovery plan, with a goal of completing it within 1 year after completing the draft recovery plan. We will also prepare a recovery implementation strategy, which will contain step-down activities or projects needed to implement the recovery actions described in the recovery plan.

*(9) Comment:* One commenter recommended that we designate additional unoccupied critical habitat downstream from Seven Hundred Springs.

*Our Response:* We have the ability to designate areas that are not occupied by the species (*i.e.*, unoccupied areas) as critical habitat if they possess one or more of the physical and biological features that are essential for the conservation of the species. While we find that the species needs additional populations in more locations in order to recover to the point of no longer needing the protections of the Act, we do not possess sufficient data to demonstrate that any other areas exist that possess habitat essential for the conservation of South Llano springs moss.

## **Determination of South Llano Springs Moss's Status**

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an “endangered species” as a species in danger of extinction throughout all or a significant portion of its range, and a “threatened species” as a species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of endangered species or threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

### *Status Throughout All of Its Range*

After evaluating threats to the species and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we are listing the South Llano springs moss as an endangered species throughout all of its range. Only two very small populations of South Llano springs moss have been documented, which were last observed in 1971 and 1979. One is now extirpated, and the other is restricted to a 10-by-100-m (33-by-328-ft) zone between Seven Hundred Springs and the South Llano River (Wyatt and Stoneburner 1980, p. 516). Therefore, the species has an extremely low level of representation, and no redundancy, making it vulnerable to catastrophic events such as flash floods and droughts. During historical droughts, such as in the 1950s and 2006–2012, many regional springs ceased flowing, and the flow of Seven Hundred Springs was greatly reduced. Projected climate changes include an increased frequency, duration, and severity of droughts (Factor E), thereby increasing the risk of interrupting the flow of

Seven Hundred Springs and the desiccation and mortality of this obligately aquatic moss (Factor A). The amount of pumping from the Edwards-Trinity aquifer is one of the most important factors influencing storage in the aquifer and the spring flows on which the South Llano springs moss relies. Groundwater pumping is likely to increase as the human population grows and as the severity and duration of droughts increases. Prolonged drought (Factor E), in combination with increased pumping from the Edwards-Trinity aquifer (Factor E), further increase the probability of interrupting the flow of Seven Hundred Springs (Factor A) and, consequently, the probability of extinction of the South Llano springs moss.

The South Llano springs moss has little or no genetic diversity (Factor E) because this species likely consists of clones of one or a few male individuals and is no longer capable of sexual reproduction (Factor E). Consequently, the species has very low representation and likely has very little ability to adapt to environmental changes. In addition, the South Llano springs moss has poor redundancy because there is only one small population remaining. One future drought event that reduces the flow of Seven Hundred Springs could result in the extirpation of this species.

We find that the South Llano springs moss is presently in danger of extinction throughout its entire range based on the one small population that is likely genetically compromised. This status puts the species on the brink of extinction where normal stochastic events, such as drought, flooding, or a human-caused drop in the aquifer level, could lead to further decline or loss of the species entirely. The only other known population has not been observed since 1971 and is considered likely extirpated. This one remaining population could be affected by a variety of threats acting in combination to reduce the overall viability of the species. The risk of extinction is high because the remaining population is small, with no known potential for natural recolonization. We find that a threatened species status is not appropriate for the South Llano springs moss



because of the species' current precarious condition due to its contracted range, small population size, and likely compromised genetics, and because these stressors are severe, ongoing, and expected to continue into the future.

Therefore, after assessing the best available information, we determine that the South Llano springs moss is in danger of extinction throughout all of its range.

#### *Status Throughout a Significant Portion of Its Range*

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. We have determined that the South Llano springs moss is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portions of its range. Because the South Llano springs moss warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Center for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020), because that decision related to significant portion of the range analyses for species that warrant listing as threatened, not endangered, throughout all of their range.

#### *Determination of Status*

Our review of the best available scientific and commercial information indicates that the South Llano springs moss meets the Act's definition of an endangered species. Therefore, we are listing the South Llano springs moss as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act.

#### **Available Conservation Measures**

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and

conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies, including the Service, and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) may be established to develop and implement recovery plans. The recovery planning process involves the identification of actions that are necessary to halt and reverse the species' decline by addressing the threats to its survival and recovery. The recovery plan identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened ("downlisting") or removal from protected status ("delisting"), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery outline,

draft recovery plan, final recovery plan, and any revisions will be available on ECOS as they are completed (<https://ecos.fws.gov/ecp/>), or from our Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.*, restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

Once this species is listed (see **DATES**, above), funding for recovery actions may be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the State of Texas will be eligible for Federal funds to implement management actions that promote the protection or recovery of the South Llano springs moss. Information on our grant programs that are available to aid species recovery can be found at:

<https://www.fws.gov/service/financial-assistance>.

Please let us know if you are interested in participating in recovery efforts for the South Llano springs moss. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this

interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with us.

Federal agency actions within the species' habitat that may require conference, consultation, or both as described in the preceding paragraph include management and conservation projects conducted on private lands with support from the Service's Partners for Fish and Wildlife Program; issuance of section 404 Clean Water Act (33 U.S.C. 1251 et seq.) permits by the U.S. Army Corps of Engineers; construction and maintenance of roads or highways by the Federal Highway Administration; construction and maintenance of railways by the Federal Railroad Administration; and discharge permits from the Environmental Protection Agency.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered plants. The prohibitions of section 9(a)(2) of the Act, codified at 50 CFR 17.61, make it illegal for any person subject to the jurisdiction of the United States to: Import or export; remove and reduce to possession from areas under Federal jurisdiction; maliciously damage or destroy on any such area; remove, cut, dig up, or damage or destroy on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law; deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity; or sell or offer for sale in interstate or foreign commerce an endangered plant. Certain exceptions apply to employees of the Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered plants under certain circumstances. Regulations governing permits are codified at 50 CFR 17.62. With regard to endangered plants, a permit may be issued for scientific purposes or for enhancing the propagation or survival of the species. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a final listing on proposed and ongoing activities within the range of a listed species. Based on the best available information, the following actions are unlikely to result in a violation of section 9, if these activities are carried out in accordance with existing regulations and permit requirements; this list is not comprehensive:

(1) Recreational use of the streams, such as fishing, swimming, and canoeing, as these activities normally take place in the river or on the river bank and not in the spring itself; and

(2) Normal residential landscaping activities, as these activities do not take place in the spring, nor do they affect the quantity or quality of water in the spring.

Based on the best available information, the following activities may potentially result in a violation of section 9 of the Act if they are not authorized in accordance with applicable law; this list is not comprehensive:

(1) Removing, cutting, digging up, or damaging or destroying the South Llano springs moss in knowing violation of any law or regulation of the State of Texas or in the course of any violation of a State criminal trespass law;

(2) Importing the South Llano springs moss into, or exporting it from, the United

States;

(3) Delivering, receiving, carrying, transporting, or shipping the South Llano springs moss in interstate or foreign commerce, by any means and in the course of a commercial activity; and

(4) Selling or offering the South Llano springs moss for sale in interstate or foreign commerce.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

## **II. Critical Habitat**

### **Background**

Section 4(a)(3) of the Act requires that, to the maximum extent prudent and determinable, we designate a species' critical habitat concurrently with listing the species. Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g.,

migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

This critical habitat designation was proposed when the regulations defining “habitat” (85 FR 81411; December 16, 2020) and governing the 4(b)(2) exclusion process for the Service (85 FR 82376; December 18, 2020) were in place and in effect. However, those two regulations have been rescinded (87 FR 37757; June 24, 2022, and 87 FR 43433; July 21, 2022) and no longer apply to any designations of critical habitat. Therefore, for this final rule designating critical habitat for the South Llano springs moss, we apply the regulations at 424.19 and the 2016 Joint Policy on 4(b)(2) exclusions (81 FR 7226; February 11, 2016).

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation also does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal

agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement “reasonable and prudent alternatives” to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act’s definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat).

Under the second prong of the Act’s definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data



available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information from the SSA report and information developed during the listing process for the species. Additional information sources may include any generalized conservation strategy, criteria, or outline that may have been developed for the species; the recovery plan for the species; articles in peer-reviewed journals; conservation plans developed by States and counties; scientific status surveys and studies; biological assessments; other unpublished materials; or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the prohibitions found in section 9 of the Act. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the

time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

### **Physical or Biological Features Essential to the Conservation of the Species**

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. The regulations at 50 CFR 424.02 define “physical or biological features essential to the conservation of the species” as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkaline soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or absence of a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species.

In considering whether features are essential to the conservation of the species, we may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

#### *Summary of Essential Physical or Biological Features*

We derive the specific physical or biological features essential to the conservation of South Llano springs moss from studies of the species' habitat, ecology, and life history as described below. Additional information can be found in the SSA report (Service 2023, entire; available at <https://www.regulations.gov> under Docket No. FWS-R2-ES-2020-0015). We have determined that the following physical or biological features are essential to the conservation of South Llano springs moss:

- (1) The uninterrupted flow of spring water supplied by the Edwards-Trinity aquifer within the South Llano watershed.
- (2) Relatively constant water temperature due to proximity to the point of spring outflow.
- (3) A substrate of calcareous or travertine rock not more than 15 centimeters (cm) (6 inches (in)) below the surface of the water.
- (4) Contaminant and sediment levels that do not exceed the tolerance limits of South Llano springs moss and associated plant and animal species.

#### **Special Management Considerations or Protection**

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are

essential to the conservation of the species and which may require special management considerations or protection.

The features essential to the conservation of this species may require special management considerations or protection to reduce the following stressors: reduction or loss of spring flow, erosion, and sedimentation. Management activities that could ameliorate these stressors include (but are not limited to): prescribed fire, brush management, and grazing management to increase infiltration into the Edwards-Trinity aquifer and reduce runoff and subsequent flooding.

### **Criteria Used To Identify Critical Habitat**

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat. We are not designating any areas outside the geographical area occupied by the species because we have not identified any unoccupied areas that meet the definition of critical habitat. While we acknowledge that the conservation of the species will depend on increasing the number of sites, we are not aware of any other area that has habitat suitable to support the species. Therefore, we are unable at this time to identify any specific unoccupied areas that are essential to the species' conservation. For an area to be considered essential unoccupied habitat, we must have reasonable certainty both that the area will contribute to the conservation of the species and that the area contains one or more of the physical or biological features essential to the conservation of the species. The exact location of the Redfearn site is unknown, and, although there are a number of other large springs emerging from the Edwards-Trinity aquifer, it is unknown if these

sites would be biologically suitable for the species. In addition, there is uncertainty that the species could be transplanted successfully if suitable sites existed for reintroduction.

In summary, for areas within the geographic area occupied by the species at the time of listing, we delineated critical habitat unit boundaries by evaluating the area of spring flow and submerged limestone within the geographic area occupied at the time of listing. We delineated one critical habitat unit that we determined to be occupied at the time of listing (*i.e.*, currently occupied) and that contains one or more of the physical or biological features that are essential to support life-history processes of the species.

As a result of our exclusion analysis (see *Exclusions Based on Other Relevant Impacts*, below), we are not designating critical habitat for this species.

### **Final Critical Habitat Designation**

We are not designating critical habitat for South Llano springs moss (see *Exclusions Based on Other Relevant Impacts*, below).

### **Exemptions**

#### *Application of Section 4(a)(3) of the Act*

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that the Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DoD), or designated for its use, that are subject to an integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act Improvement Act of 1997 (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation. In preparing this final rule, we have determined that the lands within the unit proposed as critical habitat for South Llano springs moss are not owned or managed by the DoD.

## **Consideration of Impacts under Section 4(b)(2) of the Act**

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. Exclusion decisions are governed by the regulations at 50 CFR 424.19 and the Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act (hereafter, the “2016 Policy”; 81 FR 7226, February 11, 2016), both of which were developed jointly with the National Marine Fisheries Service (NMFS). We also refer to a 2008 Department of the Interior Solicitor’s opinion entitled, “The Secretary’s Authority to Exclude Areas from a Critical Habitat Designation under Section 4(b)(2) of the Endangered Species Act” (M-37016). We explain each decision to exclude areas, as well as decisions not to exclude, to demonstrate that the decision is reasonable.

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise discretion to exclude the area only if such exclusion would not result in the extinction of the species. In making the determination to exclude a particular area, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor. We describe below the process that we undertook for taking into consideration each category of impacts and our analyses of the relevant impacts.

### *Exclusions Based on Economic Impacts*

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM) and screening analysis which, together with our narrative and interpretation of effects, we consider our economic analysis of the critical habitat designation and related factors (IEc 2019, entire). The analysis, dated December 20, 2019, was made available for public review from September 28, 2021, through November 29, 2021 (see 86 FR 53609). The economic analysis addressed probable economic impacts of critical habitat designation for South Llano springs moss. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Additional information relevant to the probable incremental economic impacts of critical habitat designation for the South Llano springs moss is summarized below and available in the screening analysis for the South Llano springs moss (IEc 2019, entire), available at <https://www.regulations.gov>.

The screening analysis found that the critical habitat designation for the South Llano springs moss would be likely to result in annual incremental costs of approximately \$8,100 per year above those incurred due to the species listing alone. These costs would occur as a result of additional administrative efforts to consider adverse modification of critical habitat during section 7 consultations. The designation of critical habitat is not expected to trigger additional requirements under State or local regulations, nor is the designation expected to have perceptual effects on markets.

We considered the economic impacts of the critical habitat designation. The Secretary is not exercising her discretion to exclude any areas from this designation of critical habitat for the South Llano springs moss based on economic impacts.

### *Exclusions Based on Impacts on National Security and Homeland Security*

In preparing this rule, we have determined that the lands within the proposed designation of critical habitat for South Llano springs moss are not owned or managed by the DoD or Department of Homeland Security (DHS), and, therefore, we anticipate no impact on national security or homeland security. We also received no requests for exclusion from DoD or DHS. We did not receive any additional information during the public comment period for the proposed designation regarding impacts of the designation on national security or homeland security that would support excluding any specific areas from the final critical habitat designation under authority of section 4(b)(2) and our implementing regulations at 50 CFR 424.19. Based on this information, the Secretary has determined not to exercise her discretion to exclude any areas from this designation of critical habitat based on impacts on national security or homeland security.

### *Exclusions Based on Other Relevant Impacts*

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security discussed above. We consider a number of factors, including whether there are permitted conservation plans covering the species in the area—such as HCPs, safe harbor agreements (SHAs), or candidate conservation agreements with assurances (CCAAs)—or whether there are non-permitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at the existence of Tribal conservation plans and partnerships and consider the government-to-government relationship of the United States with Tribal entities. We also consider any social impacts that might occur because of the designation.

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that the area would receive due to the protection from destruction or adverse modification as a result of actions with a Federal nexus, the educational benefits



of mapping essential habitat for recovery of the listed species, and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

In the case of the South Llano springs moss, the benefits of critical habitat include public awareness of the presence of the species and the importance of habitat protection, and, where a Federal nexus exists, increased habitat protection for the South Llano springs moss due to protection from destruction or adverse modification of critical habitat.

When identifying the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation, or in the continuation, strengthening, or encouragement of partnerships. Additionally, continued implementation of an ongoing management plan that provides equal to or more conservation than a critical habitat designation would reduce the benefits of including that specific area in the critical habitat designation.

We evaluate the existence of a conservation plan when considering the benefits of inclusion. We consider a variety of factors, including, but not limited to, whether the plan is finalized; how it provides for the conservation of the essential physical or biological features; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective; and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction of

the species. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Based on the public comments we received, and the best scientific data available, we evaluated whether lands in the critical habitat unit identified in the proposed rule were appropriate for exclusion from the final designation under section 4(b)(2) of the Act. If the analysis indicates that the benefits of excluding lands from the final designation outweigh the benefits of designating those lands as critical habitat, then the Secretary may exercise her discretion to exclude the lands from the final designation. In the paragraphs below, we provide a detailed balancing analysis of the critical habitat being excluded under section 4(b)(2) of the Act.

#### Non-Permitted Conservation Plans, Agreements, or Partnerships

We sometimes exclude specific areas from critical habitat designations based in part on the existence of private or other non-Federal conservation plans or agreements and their attendant partnerships. A conservation plan or agreement describes actions that are designed to provide for the conservation needs of a species and its habitat, and may include actions to reduce or mitigate negative effects on the species caused by activities on or adjacent to the area covered by the plan. Conservation plans or agreements can be developed by private entities with no Service involvement, or in partnership with the Service, sometimes through the permitting process under Section 10 of the Act.

When we undertake a discretionary section 4(b)(2) analysis, we evaluate a variety of factors to determine how the benefits of any exclusion and the benefits of inclusion are affected by the existence of private or other non-Federal conservation plans or agreements and their attendant partnerships. Shown below is a non-exhaustive list of factors that we consider in evaluating how non-permitted plans or agreements affect the benefits of inclusion or exclusion. These are not required elements of plans or agreements. Rather, they are some of the factors we may consider, and not all of these

factors apply to every plan or agreement.

(i) The degree to which the record of the plan, or information provided by proponents of an exclusion, supports a conclusion that a critical habitat designation would impair the realization of the benefits expected from the plan, agreement, or partnership.

(ii) The extent of public participation in the development of the conservation plan.

(iii) The degree to which agency review and required determinations (*e.g.*, State regulatory requirements) have been completed, as necessary and appropriate.

(iv) Whether NEPA reviews or similar reviews occurred, and the nature of any such reviews.

(v) The demonstrated implementation and success of the chosen mechanism.

(vi) The degree to which the plan or agreement provides for the conservation of the physical or biological features that are essential to the conservation of the species.

(vii) Whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan or agreement will be implemented.

(viii) Whether the plan or agreement contains a monitoring program and adaptive management to ensure that the conservation measures are effective and can be modified in the future in response to new information.

*Upper South Llano River Unit (also known as Seven Hundred Springs)*—We proposed to designate critical habitat identified as the “Upper South Llano River Unit” (0.48 ac (0.19 ha)) on privately owned lands where the South Llano springs moss occurs.

Our Partners for Fish and Wildlife Program has a history of working with the private landowner on whose property Seven Hundred Springs occurs and where critical habitat was proposed. Since 2013, we have completed five habitat improvement projects in partnership with the private landowner. These projects included prescribed burning on over 1,000 ac plus mechanical restoration on 1,126 ac of upland native grassland habitat

that benefit the South Llano springs moss by reducing runoff, flash flooding, and soil erosion, and increasing infiltration of rainwater into the aquifer that supplies Seven Hundred Springs. These benefits to the springs help ensure the physical and biological features necessary for the persistence of the species, including uninterrupted flow of spring water and sediment levels that do not exceed the tolerance limits of the South Llano springs moss.

#### *Benefits of Inclusion*

The benefits of including lands in critical habitat can be regulatory, can be educational, or can aid in recovery of species as generally discussed above. We expect only minimal regulatory benefits from the designation of critical habitat for the South Llano springs moss. Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. The difference in the outcomes of the jeopardy analysis and the adverse modification analysis represents the regulatory benefits and costs of critical habitat. A critical habitat designation requires Federal agencies to consult on whether their activity would destroy or adversely modify critical habitat to the point where recovery could not be achieved. However, all proposed critical habitat is occupied by the species, and thus would require section 7 consultation for any project with a Federal nexus that may affect the South Llano springs moss. Any project that would destroy or adversely modify critical habitat would also jeopardize the continued existence of the species, since the species is entirely dependent upon Seven Hundred Springs for its survival. Additionally, as the proposed critical habitat is located entirely on private property, we foresee very few section 7 consultations due to a lack of a Federal nexus. Any additional projects conducted by the Partners for Fish and Wildlife Program would be covered by a section 7

consultation. The rarity of section 7 consultations results in very limited regulatory benefits for the designation of critical habitat in the proposed Upper South Llano River Unit. Given the anticipated rarity of section 7 consultation, the dependence on private conservation actions is more important.

Another important benefit of including lands in a critical habitat designation is that it can serve to educate landowners, agencies, Tribes, and the public regarding the potential conservation value of an area, and this may focus and contribute to conservation efforts by other parties by clearly delineating areas of high conservation value for certain species. Any information about the South Llano springs moss and its habitat that reaches a wide audience, including other parties engaged in conservation activities, would be considered valuable. We expect the educational benefits to be especially limited in the proposed Upper South Llano River Unit, because it occurs entirely on private lands that are not open to the public. With limited regulatory and educational benefits likely as a result of designating critical habitat, we foresee no other tangible benefits to further recovery of the species, and so the benefits of inclusion are outweighed by the benefits of exclusion as further explained below.

#### *Benefits of Exclusion*

The only known population of the South Llano springs moss is fully within private ownership, and, therefore, Federal agencies have no jurisdiction to manage its habitat. As a result, partnerships with and among private individuals, like the landowner of the proposed Upper South Llano River Unit, are the key to conserving the species through habitat conservation projects such as the Partners for Fish and Wildlife projects that have been completed near Seven Hundred Springs. Therefore, we find it is important to consider the potential benefits that will be realized by fostering positive relationships with the landowner if we exclude the area from critical habitat designation.

Excluding the entirety of the proposed critical habitat, known as the Upper South Llano River Unit, would provide benefits through the continuance and strengthening of our effective cooperative relationship with the landowner to promote the conservation of the South Llano springs moss and its habitat. Since the South Llano springs moss occurs only in the privately owned Upper South Llano River Unit, continued conservation and recovery of this species is entirely dependent upon cooperation and coordination with the landowner. This landowner has worked with our Partners for Fish and Wildlife program in the past, and the aforementioned five habitat improvement projects accomplished in partnership with the private landowner since 2013 have benefited the South Llano springs moss and its habitat. The designation of critical habitat is anticipated to harm the previously cooperative working relationship that we have established with the landowner. We anticipate that continuing our cooperative relationship with the landowner will allow voluntary conservation work to continue, which will benefit the South Llano springs moss and its recovery.

The South Llano springs moss and its habitat are expected to benefit substantially from voluntary landowner management actions that implement appropriate and effective conservation strategies. Where consistent with the discretion provided by the Act, it is beneficial to implement policies that provide positive incentives to private landowners to voluntarily conserve natural resources and that remove or reduce disincentives to conservation (Wilcove et al. 1998, entire; Bean 2002, pp. 1–7). Thus, it is important for the South Llano springs moss's recovery to build on continued conservation activities such as these with a proven partner, and to provide positive incentives to the private landowner to implement voluntary conservation activities. These conservation actions help ensure the uninterrupted flow of spring water and sediment levels that do not exceed the tolerance limits of the South Llano springs moss, aiding the recovery of the species.

The benefits of excluding this area from critical habitat will encourage the continued conservation, land management, and coordination between the landowner and the Service. Excluding the proposed Upper South Llano River Unit from critical habitat helps ensure the future conservation, research, and information sharing for the recovery of the South Llano springs moss.

*Benefits of Exclusion Outweigh the Benefits of Inclusion*

We have determined that the benefits of exclusion of the proposed Upper South Llano River Unit from critical habitat designation outweigh the benefits of inclusion of the unit because maintaining a positive working relationship and partnership with the landowner is vital to the conservation and recovery of the species. The benefits of designating critical habitat for the moss are few since these lands are privately owned and thus lack a trigger for section 7 consultation for adverse modification of critical habitat unless a project with a Federal nexus is proposed. Additionally, all habitat within the proposed critical habitat unit is occupied, so any project with a Federal nexus would require consultation with us due to the listing of the species. Section 9 of the Act provides few protections to listed plants, and protections to listed plants on private lands pertain only to prohibited actions conducted in knowing violation of any State law or regulation, or in violation of a State criminal trespass law. Without the presence of a Federal nexus which would require a consultation under section 7, the South Llano springs moss would have little to no protections. Since the only known population of this species occurs on this private land, the maintenance of a working relationship with the landowner is vital to the recovery and conservation of the species. Therefore, the benefits of excluding this area from designation as critical habitat for the South Llano springs moss outweigh the benefits of inclusion.

*Exclusion Will Not Result in Extinction of the Species*

We have determined that excluding all proposed critical habitat from designation will not result in the extinction of the species, nor hinder its recovery. If a Federal action or Federal permitting occurs that may affect the moss, the listing of South Llano springs moss will require evaluation under the jeopardy standard of section 7 of the Act, even absent the designation of critical habitat, and thus will protect the species against extinction. Accordingly, based on the above discussion, the Secretary is exercising her discretion to exclude the entirety of the proposed Upper South Llano River Unit (approximately 0.48 ac (0.19 ha) of land) and, therefore, critical habitat for the moss will not be designated under section 4(b)(2) of the Act because the benefits of exclusion outweigh the benefits of inclusion and will not cause the extinction of the species.

#### *Tribal Lands*

Several Executive Orders, Secretary's Orders, and policies concern working with Tribes. These guidance documents generally confirm our trust responsibilities to Tribes, recognize that Tribes have sovereign authority to control Tribal lands, emphasize the importance of developing partnerships with Tribal governments, and direct the Service to consult with Tribes on a government-to-government basis.

A joint Secretary's Order that applies to both the Service and the National Marine Fisheries Service (NMFS)—Secretary's Order 3206, *American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act* (June 5, 1997) (S.O. 3206)—is the most comprehensive of the various guidance documents related to Tribal relationships and Act implementation, and it provides the most detail directly relevant to the designation of critical habitat. In addition to the general direction discussed above, the appendix to S.O. 3206 explicitly recognizes the right of Tribes to participate fully in any listing process that may affect Tribal rights or Tribal trust resources; this includes the designation of critical habitat. Section 3(B)(4) of the appendix requires us to consult with affected Tribes when considering the designation of critical



habitat in an area that may impact Tribal trust resources, Tribally owned fee lands, or the exercise of Tribal rights. That provision also instructs us to avoid including Tribal lands within a critical habitat designation unless the area is essential to conserve a listed species, and it requires us to evaluate and document the extent to which the conservation needs of the listed species can be achieved by limiting the designation to other lands.

Our implementing regulations at 50 CFR 424.19 and the 2016 Policy are consistent with S.O. 3206. When we undertake a discretionary exclusion analysis under section 4(b)(2) of the Act, in accordance with S.O. 3206 we consult with any Tribe whose Tribal trust resources, tribally owned fee lands, or Tribal rights may be affected by including any particular areas in the designation. We evaluate the extent to which the conservation needs of the species can be achieved by limiting the designation to other areas and give great weight to Tribal concerns in analyzing the benefits of exclusion.

However, S.O. 3206 does not override the Act's statutory requirement of designation of critical habitat. As stated above, we must consult with any Tribe when a designation of critical habitat may affect Tribal lands or resources. The Act requires us to identify areas that meet the definition of "critical habitat" (*i.e.*, areas occupied at the time of listing that contain the essential physical or biological features that may require special management or protection and unoccupied areas that are essential to the conservation of a species), without regard to land ownership. While S.O. 3206 provides important direction, it expressly states that it does not modify the Secretary's statutory authority under the Act or other statutes.

There are no Tribal lands or Tribal trust resources within the range of the South Llano springs moss.

#### *Summary of Exclusions*

As discussed above, based on the information provided by entities seeking exclusion, as well as any additional public comments we received, we evaluated whether

certain lands in the proposed critical habitat were appropriate for exclusion from final designation pursuant to section 4(b)(2) of the Act. We are not designating critical habitat for the South Llano springs moss; the area we proposed for critical habitat designation but that we are excluding in this rule is described in the table below.

**Table of area excluded from critical habitat designation by proposed critical habitat unit.**

<b>Proposed Unit</b>	<b>Specific Area</b>	<b>Areas Meeting the Definition of Critical Habitat, in Acres (Hectares)</b>	<b>Areas Excluded from Critical Habitat, in Acres (Hectares)</b>
1: Upper South Llano River	Seven Hundred Springs	0.48 (0.19)	0.48 (0.19)

### **Required Determinations**

#### *National Environmental Policy Act (42 U.S.C. 4321 et seq.)*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA) in connection with regulations adopted pursuant to section 4(a) of the Act. We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.), need not be prepared in connection with listing a species as an endangered or threatened species under the Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

#### *Government-to-Government Relationship with Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments),

and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with Federally recognized Tribes on a government-to-government basis. In accordance with Secretary's Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. No Tribal lands or Tribal trust resources will be affected by this rule.

### **References Cited**

A complete list of references cited in this rulemaking is available on the internet at <https://www.regulations.gov> and upon request from the Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Authors**

The primary authors of this final rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Austin Ecological Services Field Office.

### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Plants, Reporting and recordkeeping requirements, Transportation, Wildlife.

### **Regulation Promulgation**

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

### **PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS**

1. The authority citation for part 17 continues to read as follows:

AUTHORITY: 16 U.S.C. 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.

2. Amend § 17.12, in paragraph (h), the List of Endangered and Threatened Plants, by:

- a. Adding the heading “MOSES” to the end of the table; and
- b. Adding an entry for “*Donrichardsia macroneuron*” under the new heading “MOSES”.

The additions read as follows:

**§ 17.12 Endangered and threatened plants.**

\* \* \* \* \*

(h) \* \* \*

Scientific name	Common name	Where listed	Status	Listing citations and applicable rules
* * * * *	* * *	MOSES		
<i>Donrichardsia macroneuron</i>	South Llano springs moss	Wherever found	E	88 FR [insert <i>Federal Register</i> page where the document begins], [Insert date of publication in the <i>Federal Register</i> ].

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**Wendi Weber,**  
*Acting Director,*  
*U.S. Fish and Wildlife Service.*